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Finally, in regard to Judge Johnson's "outline of the evolution of the Florida Peninsula," I confess to being ignorant of its existence either in print or otherwise, until long after my own views had not only been verbally communicated to many members of the U. S. Geological Survey and presented to the Biological Society of Washington, but had been circulated in type-written copies for the use of Mr. Eldridge's field-party. It is proper to say that while I had for some time entertained the theoretical view of the insulation of the Eocene island of Florida, the final proof was supplied by the field observations of Mr. T. W. Stanton of the U. S. Geological Survey, while the exploration of the Chipola beds, for material by which their age was determined, and the discovery of their existence in the typical locality on the Chipola River were first made by Mr. Frank Burns of the U. S. Geological Survey; though Langdon had previously observed the lower bed at Alum Bluff, which proves to be of the same age.

WM. H. DALL.

Smithsonian Institution, Oct. 31.

#### BOOK-REVIEWS.

*A Course on Zoölogy. Designed for Secondary Education.* By MONTMAHON and BEAUREGARD. Translated from the French by WM. H. GREEN. Phila., J. B. Lippincott Co. 75 cts.

THE introductory books of science of Paul Bert for use in the lower schools are very well known in this country, and have been of very great value in introducing science into the lower grades of education. The above course of zoölogy by Montmahon and Beauregard is designed as a second book in the same series, and is planned to give to a higher grade of students a somewhat extensive study in zoölogy. The translation of this book into English will be of great value to many of our high schools where an elementary text-book in zoölogy is desired and one interesting to students. The plan of the book is the natural method of proceeding from the known to the unknown. It begins with an out-

line of the study of human anatomy and physiology, and passes from this subject to the study of the dog, the chicken, the lizard, the frog, the fish, and then to the invertebrates, beginning naturally with insects and crustacea and then passing through the lower orders of invertebrates somewhat more hurriedly. After having thus given a general study of a type illustrative of each of the large groups of animals, the last half of the book is occupied with a popular study of the larger and better known animals, chiefly mammals and birds. This part of the book is very abundantly illustrated with figures of the animals mentioned and described, and throughout the illustrations are abundant and good. For the purpose designed this book is open to the criticism that it attempts to crowd rather too much detailed information and too many scientific terms into a short compass. But, on the whole, the style is simple, easily understood by the student for whom the book is designed, and the book seems to be admirably adapted for exciting an interest in zoölogical subjects among students of the secondary grade of schools. The scholar will hardly get a systematic knowledge of zoölogy out of the book, but this could not be expected of any zoölogy adapted to the secondary schools. The work can hardly fail to excite an interest, however, in the scholar and lead him to using his own eyes in the observation of nature, which is, of course, the chief design of scientific instruction in the lower schools. This book can thus certainly be recommended for introduction into high schools and even into schools of lower grade.

*Chemical Theory for Beginners.* By LEONARD DOBBIN and JAMES WALKER. New York, Macmillan & Co. 8°. 248 p. 70 cents.

THE study of chemical theories should be based upon a wide range of experimental facts; and the title of this little volume is unpromising. The theories, however, are supported by numerous experiments. The beginner may find some things hard to understand, but much that is profitable. Those who are familiar with

#### CALENDAR OF SOCIETIES.

##### Philosophical Society, Washington.

Nov. 26.—F. L. O. Wadsworth, Method of Determination of the Metre in Terms of a Wave Length of Light; B. E. Fornow, Recent Contributions Towards the Discussion of Forest Influences; R. T. Hill, The Occurrence of Iron in Mexico.

##### New York Academy of Sciences, Biological Section.

Nov. 14.—The papers were: Arthur Hollick, On Additions to the Palæobotany of Staten Island. About forty species were presented, of which half had been already described from Greenland Cretaceous and from the Laramie. The fossils, leaf-fragments, fruits, and seeds, occur in fire-brick clay, or in ferruginous sandstone or concretions. The genera notably represented were *Populus*, *Platanus*, *Myrica*, *Kalmia*, *Acer*, and *Williamsonia*. H. F. Osborn, Report upon a Collection of Mammals from the Cretaceous (Laramie). The multituberculates, *Meniscoëssus* and *Ptilodus*, were assigned to the *Plagiaulacidae*, the former a probable ancestor of *Polymastodon*. The relations of these mammals were shown to be closer to *Puerco* than to Upper Jurassic forms. Arthur Willey, On the Significance of the Pituitary Body, and made the suggestion, founded on researches on the Ascidiants and *Amphioxus*, that, if the Amphihrinic condition of the higher vertebrates was preceded by a Monorhinic condition, the nose in the latter case was not represented by the small nasal sac of *Petromyzon*, of which the unpaired character is undoubtedly secondary, as shown both by its development (Dohrn) and by its nerve-supply; but the nose in the Monorhinic an-

cestor of the Vertebrates was the organ which we know as the Pituitary Body or Hypophysis cerebri in all existing Vertebrates, this being represented in the Ascidiants, as shown by Julin, by the subneurial gland and its duct, and in *Amphioxus* by the so-called olfactory pit. The Pituitary Body is to the lateral Nares what the Pineal Body is to the lateral Eyes. Bashford Dean exhibited an entire *Cladodus*, a unique specimen recently collected in the Cleveland Shales. The tail, for the first time shown, indicates historically the origin of this part in modern elasmobranches.

#### Publications Received at Editor's Office.

ADDISON, STEELE AND BUDGELL. Sir Roger de Coverley Papers. English Classics for Schools. New York, American Book Co. 148 p. 12°. 20 cents.  
 ALLSOP, F. C. Practical Electric-Light Fitting. New York, Macmillan & Co. 275 p. 12°. \$1.50.  
 BABET. 99 Methods of Utilizing Boiled Beef. Tr. from the French. New York, John Ireland. 122 p. 8°. 75 cents.  
 BARKER, A. S. Deep-Sea Sounding. New York, Wiley. 133 p. Maps. 8°. \$2.  
 BARKER, GEO. F. Physics; Advanced Course. Second Edition. New York, Holt. 902 p. 8°.  
 CAMPBELL, H. J. Elementary Biology. London and New York, Macmillan & Co. 284 p. 12°. \$1.60.  
 CONTRIBUTIONS from the Botanical Laboratory of the University of Pennsylvania. Vol. I., No. 1. Philadelphia, University of Pa. 73 p., pl. 8°.  
 DINGLE, EDWARD. A Study of Longitude. Plymouth, Eng., Geo. H. Sellick. 24 p. 8°. 1s.  
 GALTON, FRANCIS. Finger Prints. London and New York, Macmillan & Co. 216 p. 8°. \$2.  
 HOSKINS, L. M. Elements of Graphic Statistics. London and New York, Macmillan & Co. 191 p., pl. 8°. \$2.25.  
 IRVING, WASHINGTON. Ten Selections from the Sketch-Book. English Classics for Schools. New York, American Book Co. 149 p. 12°. 20c.  
 MCLENNAN, EVAN. Cosmical Evolution. Chicago, Donohue, Henneberry & Co., 1890. 399 p. 8°.  
 SCOTT, SIR WALTER. Ivanhoe. English Classics for Schools. New York, American Book Co. 484 p. 12°. 50 cents.  
 SHAKESPEARE, WM. Julius Caesar. English Classics for Schools. New York, American Book Co. 114 p. 12°. 20 cents.

Reading Matter Notices.  
 Ripans Tabules: for torpid liver.  
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#### THE RADIOMETER.

By DANIEL S. TROY.

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the usual phenomena of chemical action may peruse the work with still more profit. The topics are introduced methodically, beginning with units, states of aggregation, elements and compounds, and conditions of chemical action; but proceeding to the more difficult laws, and giving due notice to such topics as kinetic molecular theory, mass action, dissociation, solution, electrolysis, and the periodic law. Chemical students whose attention has been concentrated on the facts observed in experiment will find these theories very suggestive.

*An Introduction to Chemical Theory.* By ALEXANDER SCOTT. London and Edinburgh, Adam & Charles Black. 8°. 274 p. \$1.25.

THIS volume presents modern views and much valuable information upon the constitution of matter, atomic and molecular weights, classification of elements and compounds, vapor densities, and other physical properties, thermo-chemistry, chemical change, solution, and electrolysis. It claims to be an *introduction* only, although a fair knowledge of chemical facts and experiments is assumed; and it would be unreasonable to expect such completeness as in the works of Ostwald, Meyer, and Naumann. It may prove attractive to many who would be repelled by the more comprehensive works; or, better still, it may awaken a thirst for such exactness of scientific statement as requires more mathematics than Dr. Scott admits into his elementary volume.

#### AMONG THE PUBLISHERS.

"THE Eighteenth Report of the Geological Survey of Indiana: Palaeontology," by S. A. Miller, contains descriptions of a large number of new fossils from various formations, mainly of Upper Silurian and Sub-Carboniferous age. Crinoidea largely predominate, no less than 39 new species and 4 new genera being described. It is unfortunate that some of the species are described from single specimens. All are, however, illustrated. Mr. Miller

pays his compliments in his usual way to Professor James Hall and Professor Hyatt. Some of the new species are from the Cincinnati, or Hudson River, group of south-eastern Indiana.

— *St. Nicholas* is universally considered "the best of children's magazines." Contributors for 1893 include John G. Whittier, Edmund C. Stedman, Frank R. Stockton, George W. Cable, Frances Hodgson Burnett, Thos. Wentworth Higginson, George Kennan, Charles Howard Shinn, Laura E. Richards, W. O. Stoddard, Harriet Prescott Spofford, Susan Coolidge, Mary Hallock Foote, Kirk Munroe, Hezekiah Butterworth, President Gilman, Rev. Dr. Lyman Abbott, Howard Pyle, Colonel R. M. Johnston, John Burroughs, H. H. Boyesen, Nora Perry, Poultney Bigelow, Charles F. Lummis, Edith M. Thomas, Kate Douglas Wiggin, and Mary Mapes Dodge.

— Following the principles announced by Teisserenc de Bort, G. Raymond has prepared a little brochure (Paris, Gauthier-Villars) concerning the influence of the chief centres of atmospheric pressure on the prediction of the weather. De Bort laid down his general plan some years ago, and Raymond now presents a number of specific examples that seem to follow in accordance with it; illustrating the conditions for mild winters, moist summers, and so on. The book deserves study by those who have access to our International weather bulletins, and who can undertake the difficult task of generalizing their innumerable facts.

— Henry Collins has written an interesting little pamphlet on "The International Date Line" (Bardeen, Syracuse, 15 cents), giving a chart of the line that runs irregularly through the Pacific, and on either side of which the dates differ by a day. Teachers will find it instructive; although a few matters of fact might have been more fully ascertained before publication, as by correspondence with consuls. The interesting point is raised: Who first celebrate the New Year? It is clearly shown that the 180° meridian from Greenwich has not the importance often given it in the matter of changing dates.

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For sale or exchange.—A Stevens' new model pocket shot-gun, 44 cal., with 22-cal. rifle barrel. Just the thing for collecting birds and small mammals. Will exchange for a 22-cal. cane-gun or good books on ornithology. Write for particulars, stating what you have for exchange. R. C. McGREGOR, 2841 Champa st., Denver, Col.

For sale.—A very fine stone sword (?) so named by myself. It is perfect—15 inches in length, a little over 2 inches in width, and  $\frac{1}{2}$  inch thick. It is of a dark slate color, perhaps limestone, and is the largest implement of the kind known. Some fifteen years ago, when it was not mine, I was offered \$40 for it; since that time it has come into my possession; that price will now buy it. Address Rev. C. FOSTER WILLIAMS, Ashwood, Tenn.

For exchange.—Fine specimens of Wis. fresh-water pearls. I want books or papers on marine and fresh-water algae; also classified specimens of same. I will exchange for Smithsonian reports or crystallized minerals. D. M. ANDREWS, Dodge Centre, Minn.

For Sale or Exchange.—The undersigned has a lot of first-class duplicate bird's skins and sets of eggs, both rare and common, for sale or acceptable exchange. Also about two hundred second class skins and five hundred eggs, suitable for study specimens, at very low figures. The latter, for starting a collection, are as good as the best, embracing all classes and nearly all families. Also about forty species of fossils, principally Devonian. MORRIS GIBBS, M.D., Kalamazoo, Mich.

#### Wants.

A POSITION is desired in the South, preferably in the Gulf States, where I can teach the sciences. Can also instruct in other branches. Salary only nominal, as I am simply desirous of employment while spending the winter in the South. A private family preferred, but will accept regular school work if not too confining. MORRIS GIBBS, M.D., Kalamazoo, Mich.

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## The American Geologist for 1893.

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